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Eastern Spruce Budworm Council Meets in Burlington

In the spirit of international communication and cooperation, the Eastern Spruce Budworm Council met in Burlington, Vermont, April 17-18. Cohosts were the Vermont Forest Service and the USDA Forest Service.

Each area of jurisdiction presented a sketch of the results of their 1983 control program, and their plans for 1984. Most jurisdictions reported a decline in areas infested with the spruce budworm according to surveys conducted in 1983, with a consequent reduction of the 1984 spray plans. Materials planned for use in the current season were fenitrothion, aminocarb, carbaryl, and B.t. All these materials were used with success in 1983, with the biological insecticide B.t. being used mainly in environmentally sensitive areas. All agencies that used B.t. reported acceptable results in reducing current defoliation, and in most cases, the biological compared favorably with results obtained using chemicals. The higher cost of B.t. now appears to be the major deterrent to extensive use of the product. Interest was expressed in the registration and use of the new more concentrated B.t. formulations.

It was reported that the Health Committee met in Halifax, Nova Scotia, on April 8. A number of actions were recommended concerning

1. Aerial spraying of forests with pesticides and public health concerns.
2. The status of Reye's syndrome and the resolution of its epidemiology.
3. Occupational health and safety.
4. Transportation, storage and disposal of pesticides.

An advance screening of the CANUSA-East videotape production "Forest management and the spruce budworm" received favorable comments. It will be translated into French and both versions should be ready by September.

The Council is planning to hold its final meeting in tandem with the CANUSA Symposium in Bangor, Maine, to give the members an opportunity to attend the Symposium.

Proceedings of the CANUSA International Research Symposium

Our original game plan—assembling the synthesis papers plus poster abstracts for the symposium in advance, clearing them for technical review through three scholarly societies, and printing a proceedings very shortly after the symposium—has been revised. The scope of the proceedings has been expanded to include papers from the "workshop"

sessions. Also, the departure of Canadian Forestry Service head technical editor Janet Lalonde has left a chink in the CFS editorial armor. Janet was to have supervised preparation of the proceedings, and now her position cannot be filled in enough time to help with the book. Jim Mullins, who manicures the CANUSA *Newsletter* in Ottawa, will take over proceedings duties for the long haul. During the summer of 1984, Joan Murphy was detailed from the Laurentian Forest Research Centre to edit the workshop papers and poster abstracts, and to keep preparation of the proceedings on track. But Joan returned to her fold at the end of August.

Publishing soon after the symposium is still a goal, but late submission of most synthesis papers makes it unlikely. CANUSANs on the U.S. side consider it fortunate that the Canadian Forestry Service, with its continuing commitment to spruce budworm base-funded research and its April 1—March 31 fiscal year, could undertake publication of a book that would be beyond the Americans due to the termination of the Program one week after the symposium itself.

Attendees at the symposium will automatically receive a copy of the proceedings, and others interested in a copy should write to Chuck Buckner, Canadian Forestry Service, 19th floor, Place Vincent Massey, Ottawa, Ontario K1A 1G5.

The Future of the *Newsletter*

So what happens to the CANUSA *Newsletter* after we go out of business September 30, 1984? You can be sure of reading at least one more issue because we expect to print a November 1984 number to cover Program publications, the September research symposium, and the Maine-Maritimes Demonstration Tour, scheduled for the week before the symposium.

This bonus issue is made possible because the *Newsletter* is printed and mailed from Canadian Forestry Service headquarters in Ottawa. The Canadian government operates on a different fiscal year from that of the U.S. government; therefore, funding to print and distribute the *Newsletter* does not expire on October 1 north of the border, when U.S. CANUSA money runs out.

Though American readers have experienced significant delays in getting their *Newsletters*, we can guarantee that at least one more issue will be prepared and mailed from Ottawa.

At last year's Joint Planning Unit and Joint Policy and Program Council meeting, the subject of the *Newsletter*'s future was discussed, but no decision was reached. Both the Canadian Forestry Service and the USDA Forest Service's Northeastern Area (NA) of State and Private Forestry have expressed interest in adopting the *Newsletter* and putting it out, possibly on a quarterly basis. NA picked up the "Gypsy Moth-er" in a similar arrangement after termination of the USDA Gypsy Moth R&D Program.

A final decision on the situation should be reached at the last meeting of the two CANUSA governing bodies, to be held during the September symposium.

New Technology Transfer Newsletter from UMO

Dave Fosbroke and Tom Corcoran have joined forces to edit and produce a one-page "micro-journal for information transfer" out of the University of Maine, Orono. The sheet is called *Forest Technique*, and Dave advertises it as a publication "semitechnical in a nature (that) will concentrate on, but not be limited to, intensive forest-management practices that can reduce budworm impact." One early issue features Fred Knight on all the budworms, and in a second, Harvey Schiltz discusses the budworm life cycle.

The journal provides basic information useful to newcomers into budworm territory, especially "Maine-iacs." To get on the mailing list, write Dave at *Forest Technique*, 263 Nutting Hall, University of Maine, Orono, ME 04469.

Out and About

Three new CANUSA handbooks appeared in print after our previous issue went to press. Dennis Bradley's "Using Computer Simulation to Evaluate Mechanized Harvest Systems," Technical Bulletin 1687, was released for distribution June 14. This book describes a tracked feller-buncher and a rubber-tired feller-buncher in action on the computer screen, felling, tying up, and transporting "bouquets" of imaginary trees.

John Dimond, Bob Seymour, and Gordon Mott waited a long time to see their "Planning Insecticide Application and Timber Harvesting in a Spruce Budworm Epidemic" in print. Agriculture Handbook 618 rolled off the presses in Silver Spring, Maryland, early in August, after spending the summer in Pompano Beach, Florida. The manuscript was bogged down at a printing firm not set up to handle four-color work to USDA standards, and it took an extra 3 months to recapture it, re-let the printing contract, prepare new color proof, and print the book. Six-eighteen was definitely a victim of our

bottom-line requirement: we must use the cheapest printer who responds to our bids unless it can be proved in advance that that contractor cannot produce a suitable book.

Finally, and we do mean "finally," Ozzie Morris, John Dimond, and Frank Lewis's "Guidelines for the Operational Use of *Bacillus thuringiensis* Against the Spruce Budworm," Ag. Handbook 621, was printed late this summer. Wladimir Smirnoff, originally a junior author, raised objections last year to the book's recommendation of spraying B.t. at 12 BIU/acre (30 BIU/ha). This conflict could not be resolved, and Smirnoff removed his name from the text. The final version was typeset in March in good order, but the layout phase stretched out unconscionably through the summer as we attempted to work with a designer not familiar with the CANUSA Style and Design Manual specs. At last the book reached the ready-for-press stage in August. Distribution should be completed shortly, if you have not already received your copy.

Personnel

Come September, a familiar face will be missing from the CANUSA Joint Policy and Program Council. Jack Sullivan, deputy administrator for natural resources in the USDA Cooperative State Research Service, has moved over to the State Department's Agency for International Development (AID). Jack's new title is Director of Forestry and Natural Resources, and we wish him the very best in his new position.

Dave Grimble, Applications Coordinator for CANUSA-East in Broomall, has moved to the Northeastern Forest Experiment Station's research facility at Orono, Maine. He will have continuing responsibilities there, under project leader Bart Blum, in base-funded research on spruce budworm. The timing of Dave's move was fortuitous: he will be onsite for the international research symposium in Bangor.

CANUSA-East's program manager, Dan Schmitt, is retiring from the Forest Service on October 1 after a long and distinguished career as both scientist and administrator. Entitled to bail out this summer, Dan was persuaded to stay on for the research symposium. Also, Janet Searcy wouldn't let him go until she had copy for his and Yvan Hardy's handbook on the epidemiology of spruce budworm outbreaks over the last 40 years.

CANUSA-West program management is scattering to the four winds, also. Russ Mitchell, applications coordinator, moved to the Forest Service's research lab in Bend, Oregon, early in the summer. (You may recall that Russ came to CANUSA from that outpost, when we had to replace the ailing Tom Flavell.) Jim Colbert has been reassigned to the Forest Service's integrated pest management research project based in LaGrande, Oregon, and will move shortly after

CANUSA terminates. Ron Stark, former program manager and continuing consultant for the westerners, returns to his real home, Moscow, Idaho, and his post with the University of Idaho's College of Forestry, Wildlife, and Range Science.

Whereabouts of Mel McKnight and Janet Searcy after October 1 is still anybody's guess. The two CANUSANs based in the Forest Service's Washington Office have not received permanent assignments yet, but Janet is expecting to continue in place until the Program's publications are complete sometime early in 1985. Janet and Mel will continue to receive phone calls at (703) 235-8230, but the entire Forest Insect and Disease Research Staff has moved upstairs, to room 1211 of Rosslyn Plaza East (P.O. Box 2417, 1211-RPE, Washington, DC 20013). You'll need to adjust their mailing address to reflect the new room number.

Items from the Press

Budworm spraying in Quebec. — The Canadian Forestry Service and the Wood Producers Association of Gaspé will spray about 5,000 hectares of private forest lands in the Gaspé region of Quebec with the biological insecticide BT Futura.

BT Futura is described as a safe alternative to chemical insecticides in fighting spruce budworm and other forest pests.

If the pilot project proves fully effective and safe, BT Futura will be used extensively in budworm control.

(Globe & Mail — May 27, 1984)
Toronto, Ontario

Budworm spraying resumes. — Old Avenger warplanes made runs over forests in central and southern New Brunswick recently, opening their chemical and biological attack against the spruce budworm.

The small, Second World War planes are scheduled to spray about a million hectares this spring, down 500,000 hectares from last year.

Forest Protection Ltd., which administers the program, is using the chemical Matacil on most of the lands and the organic agent B-T on others. Environmentalists who oppose Matacil as a possible health hazard have little quarrel with B-T.

(Gazette — May 18, 1984)
Montreal, Quebec

Recent Publications

From the Pacific Northwest Forest and Range Experiment Station, P.O. Box 3890, Portland, OR 97208, you may request a copy of

Paul E. Aho. "Losses associated with Douglas-fir and true fir tops killed by western spruce budworm in eastern Washington." Research Paper PNW-318. 1984. (Ask for publication number 83-181.)

Molly Stock and Jackie Robertson's paper "Predicting response of forest defoliators to insects," which they presented at a symposium last September in Burlington, Vermont, has now reached print. It is found on pages 1-6 of *Research in Forest Productivity, Use, and Pest Control: Proceedings of a Symposium*, edited by Margaret M. Harris and Ann M. Spearing. University of Vermont, Burlington, is the publisher.

The same volume also contains (p. 7-12) their second presentation, "Differential population characteristics of western spruce budworm."

Wladimir Smirnoff sent us copies of his two newest Information Reports. Both are available, in combined French/English editions, from the Laurentian Forest Research Centre, Canadian Forestry Service, 1080, route du Vallon, Sainte-Foy, Quebec G1V 4C7. "Instructions for evaluating deposit of *Bacillus thuringiensis* formulas during aerial treatments" is LAU-X-54, and "Physical analysis of the dispersion of *Bacillus thuringiensis* against spruce budworm" is LAU-X-55. A. Juneau is coauthor on the second report.

A useful booklet describing the process of pesticide regulation in Canada has been published by the Canadian Pulp and Paper Association, Sun Life Building, 23rd Floor, 1155 Metcalfe Street, Montreal, Que. H3B 2X9. Ask for "A Matter of Safety — The Story of Forest Pesticide Regulation." This booklet is also published in French.

Further information on pesticides is available from Agriculture Canada through their Pesticide Research Information System, which is a computerized database comprising six sub-databases. For detail of this system, contact Jacques Taky, Head, Scientific Information Retrieval Section, Research Program Service, Room 1133, K. W. Neatby Building, Ottawa, Ont. K1A 0C6. The telephone no. (613) 995-9073.

Several articles concerning spruce budworm have been published recently and reprints are available from the Maritimes Forest Research Centre, P.O. Box 4000, Fredericton, N.B. E3B 5P7.

D. C. Eidt is the author of "B.t. budworm spray is innocuous to aquatic insects" in the MFRC Technical Note No. 114.

Also from MFRC, you may request a copy of

D. A. MacLean and T. A. Erdle. "A method to determine effects of spruce budworm on stand yield and wood supply projections for New Brunswick." For. Chron. 60:167-173 (1984).

D. A. MacLean, A. W. Kline, and D. R. Lavigne. "Effectiveness of spruce budworm spraying in New Brunswick in protecting the spruce component of spruce-fir stands." Can. J. Forest Res. 14:163-176 (1984).

D. A. MacLean. "Number of plots needed to estimate tree mortality caused by spruce budworm defoliation." CFS Research Notes 4:2-3 (1984).

Handbook 82-7 "The Spruce Budworm Handbook: A Management Guide for Spruce-Fir Stands in the Lake States" by Bruce Montgomery, Gary Simmons, John Witter, and J. Lindsey Flexner has been translated into French and is now available under

the title "États des Grands lacs — Sylviculture de l'épinette et du sapin face à la tordeuse des bourgeons de l'épinette." To get a copy of the French edition of Handbook 82-7, write to the Canadian Forestry Service, Canada-United States Spruce Budworms Program, 19th. Floor, Place Vincent Massey, Ottawa, Ontario K1A 1G5.

In the Hopper

Here is an update on the status of all the CANUSA-sponsored USDA series publications that have not already been distributed.

Yvan Hardy's "Atlas of Spruce Budworm Epidemiology in Eastern North America — 1938-80" is still in the writing/editing stages. Dan Schmitt is ghostwriting part of the text, but the maps, which make up the bulk of the handbook, are complete. This interesting publication will show how spruce budworm epidemics swept periodically out of certain epicenters of budworm activity over the past 40-odd years.

Bob Marty's "Guide to Economic Evaluation of Spruce Budworm Management Opportunities in the East" (Ag. Handbook 627) is in layout and should be printed by the end of September.

The giant eastern management manual — "Managing the Spruce Budworm in Eastern North America" — was released to the Government Printing Office late in July for printing. The first step is letting the printing contract, and then come color proof checking, printing, binding, and distribution. Because the book has fallen into our usual end-of-fiscal-year publications logjam, we do not expect it to be in print until October.

You've been waiting a long time for David Tilles and Norman Woodley's "Spruce Budworm Parasites in Maine: A Reference Manual for Collection and Identification of Common Species," Ag. Handbook 616. This book, which includes insect keys, has been dogged by production problems at the typesetting and layout/design stages, but printing is expected early this fall.

What about the "big bibliography"? Mel McKnight worked with Dan Jennings through the end of August in inputting new entries on budworm literature, but an agreement with the Deputy Chief of Research stipulates that after that date, the project be wound up. During 1985, the Forest Service will publish the entire bibliography as a USDA Bibliographies and Literature of Agriculture selection. That volume will contain corrections of the previously published entries in the original

Spruce Budworm Bibliography and Supplements 1-3 printed at the University of Maine, plus several hundred new sources entered into the data file since Supplement 3 closed out in the summer of 1983.

Doug Allen's "Monitoring Spruce Budworm Population Trends with Pheromone Traps" is several months past due, but Doug has assured us that it will arrive by early fall. Printing can be anticipated by summer 1985.

Gary Fowler and Gary Simmons's "Sampling Procedures for Spruce Budworm Egg-Mass Surveys (With References to the Lake States)" has reached its final incarnation and will be printed by late fall.

Dan Jennings and company have two more manuals in preparation. Their handbook "An Automated Egg-Mass Counter for Spruce Budworm Surveys" is awaiting inclusion of certain data from field tests scheduled for the summer of 1984 and should be finalized by the end of calendar 1984. Dan and Hew Crawford have almost finished the text for their manual entitled "Predators of the Spruce Budworm" and are presently struggling with the art work. Dan would welcome a good black-and-white photo of a carabid beetle, and probably other critters as well, if you have one.

The final version of Alex Shigo and Walt Shortle's "Shigometry — A Reference Manual for Operators" came to Washington this summer and is awaiting Janet's first free moment for attention. The manual has been revised according to the results of Washington Office Staff review, so once the text is finalized, typesetting should proceed apace.

Steve Sinclair's biggie, "Balsam Fir: Its Properties and Utilization" (Ag. Handbook 629), went into layout in late July. A fall shipping date is likely.

John Witter and the troops at the University of Michigan sent us their "Guide to Hazard Rating Spruce-Fir Stands in the Lake States and Maine" during the summer, and we expect to send it to the Department before you read this article. Barring unexpected difficulties, the book should be in print by this winter.

All of the above books are productions sponsored by CANUSA-East. The Northeastern Forest Experiment Station, 370 Reed Road, Broomall, PA 19008, has agreed to continue distributing them after the end of our Program. Until supplies are exhausted, the Station will fill your requests for a free copy. After that, you can rely on the National Technical Information Service, which will permanently maintain hard and microfiche copies of every CANUSA USDA series publication.

Turning to the handbooks sponsored by CANUSA-West, four are expected out shortly. Dick Reardon's "How To Protect Individual Trees from Western Spruce Budworm by Implants and Injections" (Ag. Handbook 625) and its companion piece, Larry Stipe's "Ground-Spray Techniques To Reduce Damage from Western Spruce Budworm" (Ag. Handbook 624) should be printed by the time you read this. Bob Stevens and Val Carolin contributed Ag. Handbook 622, "Lepidoptera Associated with Western Spruce Budworm," late in 1983, and it is also due out momentarily. With its 56 color plates, this handbook should be one of our best looking products. Finally, Dan Twardus's "How To Separate Old and New Egg Masses of the Western Spruce Budworm" (Ag. Handbook 623) is also at the printers.

Difficulties the westerner's experienced with their computer modeling effort have temporarily postponed the publication of several handbooks. Tom Bible's three contributions ("Evaluating Effects of Western Spruce Budworm on Current Harvest Schedules," "Forecasting the Effects of Western Spruce Budworm Damage on Local Economies," and "Forest Planning Using the CANUSA Program Decision-Support System") will be printed next calendar year. Nick Crookston's "User's Manual for the Western Spruce Budworm-Stand Prognosis Model Combination" and "Documentation of the Stand Prognosis-Western Spruce Budworm Model Linkage" are similarly postponed. The final two handbooks in this batch are Kathy Sheehan's "User's Manual for the Western Spruce Budworm Population Dynamics Model" and "Documentation of the Expanded Western Spruce Budworm Population Model." Though Kathy has been transferred to the Forest Service's Morgantown, West Virginia, unit, we believe she will be permitted to finish these publications during 1985.

Another publication with uncertain status is Nilima Srivastava and Bob Campbell's "Sampling Procedures for the Western Spruce Budworm."

Nilima is now working in California and Bob in New York, and the manuscript has been held back pending acceptance of the primary science by a refereed journal.

"Silvicultural Guidelines for Management of Western Spruce Budworm," by CANUSA regional rep Bill Wulf, is also in limbo. An early draft has been received but is still in the manicuring/revising stage. Publication will probably take place during 1985.

The three western management manuals — "Western Spruce Budworm," "Managing Trees and Stands Susceptible to Western Spruce Budworm," and "Western Spruce Budworm and Forest-Management Planning" — have survived the Washington Office review phase and are presently being prepared for submission to the Department of Agriculture for policy reading. This last step before typesetting will take place during August, freeing the books for production this fall. Martha Brookes, who performed primary editing on them, is taking a deserved month's vacation in August and will return, we hope, to find a mountain of galley proof on her desk in Corvallis.

Three shorter manuals are in the final stages of preparation in Martha's shop. Oz Garton has given her "Silvicultural Guidelines to Preserve and Augment Avian Predators of Western Spruce Budworm," and the manuscript is being revised after peer review. Bill Kemp's "Climatic Characteristics Associated with Occurrence and Duration of Western Spruce Budworm Outbreaks" has been edited and should reach the Washington Office by late summer. Likewise, the recently proposed submission from Thomas Swetnam and his associates, "Measuring Radial Growth Reduction of Defoliated Trees Using Dendrochronology," is out for peer review.

Steven Shattuck's "Illustrated Key to Ants Associated With Western Spruce Budworm" (Ag. Handbook 632) is in the galley proof stage and should reach its public by this fall.

The above western publications will continue to be available from the Pacific Northwest Forest and Range Experiment Station, P.O. Box 3890, Portland, OR 97208, after CANUSA ends. Likewise, all the western manuals will be entered into the National Technical Information Service for permanent availability.

For an update on our three newest publications, see "Out and About" elsewhere in this issue.

To get more information after termination of the
CANUSA Program, contact

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